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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,956	12/20/2000	Hau Lee	DEM1P003	7270
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KANG LIM 3494 CAMINO TASSAJARA ROAD #436 DANVILLE, CA 94306			ROBINSON BOYCE, AKIBA K	
			ART UNIT	PAPER NUMBER

3639

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/741,956

Applicant(s)

LEE ET AL.

Examiner

Akiba K. Robinson-Boyce

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/5/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Status of Claims***

1. Due to communications filed 10/21/05, the following is a non-final office action. Claims 1-3 have been amended. Claim 5 has been cancelled. Claims 6-9 have been added. Claims 1-4 and 6-9 are pending in this application and have been examined on the merits.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al (US 6,078,893), and further in view of Garg, (US 6,044,357)

As per claim 1 Ouimet et al discloses:

Creating, using the computer system, a plurality of demand groups, wherein each demand group is a set of at least one product, and wherein at least one of the demand groups is a set of at least two products, (col. 5, lines 45-64, [shows demand is described for each item in a given group where the product is represented by the item, in this case, one of the demand groups being a set of at least two products is inherent since Ouimet et al discloses that "each item in a given group" implies that there are more than

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one items in a group since the sales of "one" item can depend upon the parameters of all the other items]);

Creating, using the computer system, a demand group sales model as a function of price wherein said demand group sales model models sales for each demand group, (col. 6, lines 5-11, [shows a one-dimensional demand model which scales the amount of sales, in this case, the variables are simply the prices  $\{p\}$ , and the demand parameters  $q_i$  scales the amount of sales and  $g_i$ , which describes the sensitivity of the item to price]);

Creating, using the computer system, said product sales model by combining said demand group sales model and said internal market share model, (Col. 6, lines 63-64, where the user selects a figure-of-merit function to be used to tune the demand model to the sales history, thereby creating a resulting demand model that conforms to the portions of the sales history data that shows a strong trend, and conform to the external market information when the corresponding portions of the sales history data show noise as shown in the abstract, lines 13-17).

Ouimet et al does not specifically disclose wherein each demand group is a group of highly substitutable products, but does disclose defining a new market model that represents and describes how the demand parameters are expected to vary, where the demand parameters relate to the products in each demand group in col. 6, lines 17-25.

However, Garg discloses:

wherein each demand group is a group of highly substitutable products, (Col. 13, line 65, shows inventory maintenance is implemented for products which means that

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these products are replaceable through inventory stock, w/ Col. 14, lines 55-58 and col. 15 lines 17-18 and lines 24-26, show the selection of a first marketing mix, a selection of another marketing mix, and then the identification of which marketing mix generates the largest profit/loss, in this case, one marketing mix for products can be substituted for another marketing mix for the highest profit or loss outcome). Garg discloses this limitation in an analogous art for the purpose of showing that products within marketing mixes are interchangeable.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for each demand group to be a group of highly substitutable products with the motivation of having the ability to replace the products when needed.

Creating, using the computer system, an internal market share model wherein said internal market share model determines the fraction of the internal sales of each demand group comprised by each product, however does disclose defining a new market model that represents and describes how the demand parameters are expected to vary, where the demand parameters relate to the products in each demand group in col. 6, lines 17-25.

However, Garg discloses:

creating, using the computer system, an internal a market share model wherein said internal market share model determines the fraction of the internal sales of each demand group comprised by each product,, (col. 5, lines 38-41, [market share model to characterize the demand distribution for each brand, in this case, the group is represented by the brand, and the demand distribution represents a different demand

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resulting from sales for each product. This demand distribution will therefore vary for each brand, and therefore represents fraction of the sales]. In addition, the sales are internal since the demand groups are by a particular brand, which means that sales do not have to go to an external source for another brand). Garg discloses this limitation in an analogous art for the purpose of showing that market share models are used to set base stock levels for inventory management.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to create a market share model for each product in each demand group with the motivation of providing a representation of how the demand distribution is represented through products.

As per claim 6, Ouimet et al discloses:

Defining an equalizing factor for the products of each demand group, (Col. 4, line 66-Col. 5, line 6).

4. Claims 3-5, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chavez et al, (US 6,684,193), and further in view of Ouimet et al, (US 6,078,893).

As per claim 3, Chavez et al discloses:

Computer program instructions which, when executed by a computer, cause the computer to generate an econometric engine for modeling sales as a function of price, (Col. 7, lines 5-10 and lines 58-62, shows using the economical model to balance the amount of money brought in from sales against the costs).

A imputed variable generator for generating imputed econometric variables; (col. 8, lines 22-27, [consumption distribution imputed {inferred} from components]);

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A coefficient estimator coupled to the imputed variable generator, and wherein imputed variables generated by the variable generator are used by the coefficient estimator to create a demand group sales model as a function of price, an internal market share model, and a combined product sales model, [col. 15, lines 6-14, [shows an example of how the revenue coefficient is incorporated into modeling the value function in a manner to account for interactive effects between the refinements and the resources that comprise that particular model]]).

Chavez et al does not specifically disclose the terms "variable generator" or "coefficient estimator", however, does disclose an engine (col. 18, lines 23-27) that produces the same results, and therefore represents the econometric engine that contains the "variable generator" and the "coefficient estimator". Therefore, the "variable generator" and the "coefficient estimator" are inherent with Chavez et al.

Chavez et al fails to disclose including a base price variable and a base volume Variable, wherein said base volume variable represents the volume of product units sold in the absence of discount pricing or other promotional effects/an imputed base price variable and an imputed base volume variable, but does disclose the generation of a model for the demand of a product in col. 53-63, and does disclose that the base parameter's values would only depend on the sales level and price in Col. 10, line 60-67.

However, Ouimet et al discloses:

including a base price variable and a base volume variable/an imputed base price variable and an imputed base volume variable wherein said base volume variable

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represents the volume of product units sold in the absence of discount pricing or other promotional effects, (Col. 10, lines 60-65, where the base parameters in the demand model are the amount of sales and price, here the amount of sales is the volume and the price is the price, w/ col. 5, lines 64-67, shows that variables that affect the demand can include promotional activity). Ouimet et al discloses this limitation in an analogous art for the purpose of disclosing a one-dimensional demand model.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to include a base price variable and a base volume variable with the motivation of having variables available to formulate a base demand model.

As per claim 4, Chavez et al discloses:

Wherein the imputed variable generator receives raw data, and cleans the data, (Col. 20, lines 24-32, [filtering and then identifying variables]).

As per claim 9, Ouimet et al does not specifically disclose wherein said raw data includes missing or incomplete data sets, (Col. 11, lines 36-41, imperfect information). Garg discloses this limitation in an analogous art for the purpose of showing that firms do not usually know the exact strategy their competitors will adopt.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention for raw data to include missing or incomplete data with the motivation of realistically showing the details of raw data.

5. Claims 2, 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouimet et al (US 6,078,893) as applied to claim 1 above, and further in view of Garg, (US 6,044,357), and further in view of Chavez et al (US 6,684,193).



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As per claim 2, both Ouimet et al and Garg fail to disclose collecting, using the computer system, raw data; and generating, using the computer system, imputed variables from the raw data, wherein the imputed variables are used to create the product sales model, but Ouimet et al does disclose generating a sales model in Col. 6, lines 5-11.

However, Chavez et al discloses:

collecting, using the computer system, raw data; and generating, using the computer system, imputed variables from the raw data, wherein the imputed variables are used to create the product sales model, (Col. 20, lines 24-32, [filtering and then identifying variables], w/ col. 6, lines 5-11, [shows a one-dimensional demand model which scales the amount of product sales, in this case, the variables are simply the prices  $\{p\}$ , and the demand parameters  $q_i$  scales the amount of sales and  $g_i$ , which describes the sensitivity of the item to price according to product sales]). Chavez et al discloses this limitation in an analogous art for the purpose of identifying variables that go furthest in "explaining" the uncertainty in the particular variable of interest.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to collecting, using the computer system, raw data; and generating, using the computer system, imputed variables from the raw data, wherein the imputed variables are used to create the product sales model with the motivation of producing a sales model with unused product data.

As per claim 7, Ouimet et al discloses:

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including a base price variable and a base volume variable/an imputed base price variable and an imputed base volume variable wherein said base volume variable represents the volume of product units sold in the absence of discount pricing or other promotional effects, (Col. 10, lines 60-65, where the base parameters in the demand model are the amount of sales and price, here the amount of sales is the volume and the price is the price, w/ col. 5, lines 64-67, shows that variables that affect the demand can include promotional activity).

As per claim 8, Ouimet et al discloses:

Generating a moving average for base price; and generating a moving average for base volume, (Col. 6, lines 51-53, shows how values stray from those which are expected based on the average margin for an item).

### ***Response to Arguments***

6. Applicant's arguments, see pages 5-6 of the arguments, filed 10/21/05, with respect to claims 1-9 have been fully considered and are persuasive. The 35 U.S.C. 101 rejection of claims 1-9 has been withdrawn.

7. Applicant's arguments filed 10/21/05 have been fully considered but they are not persuasive.

As per claim 1, the applicant argues that Ouimet '893 does not teach nor suggest creating a demand group sales model, and does not disclose any structure which is capable of modeling sales for a group of highly substitutable products. However, as described in the rejection above, the demand group sales model is disclosed in col. 6, lines 5-11. Here, a one-dimensional demand model which scales the amount of sales is

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shown. In addition, Ouimet '893 discloses means for combining said demand model and market model to form an effective figure-of-merit function model in col. 16, lines 45-46.

The applicant also argues that neither Ouimet '893 nor Garg '357 disclose the internal market share model disclosed by the instant invention. However, as discussed above in the rejection, a market share model to characterize the demand distribution for each brand is disclosed in col. 5, lines 38-41. In this case, the group is represented by the brand, and the demand distribution represents a different demand resulting from sales for each product. This demand distribution will therefore vary for each brand, and therefore represents fraction of the sales. These sales are internal since the demand groups are by a particular brand, which means that sales do not have to go to an external source for another brand.

As per claim 3, the applicant argues that neither Chavez et al nor Ouimet et al teach nor suggest a demand group sales model, nor generating imputed econometric variable by inferring useful variables from missing or incomplete data sets, nor suggest the imputation steps. However, Chavez discloses the performance of a linear transformation of the refinement demand distribution, where the hyperplanes are clustered into groups. As far as imputed econometric variables by inference is concerned, Ouimet et al discloses where the base parameters in the demand model are the amount of sales and price in Col. 10, lines 60-65. Here, the values depend on simply what are the typical sales level and price of the item, (represented by  $q_{i0}$  and  $p_{i0}$ , where 0 means that item can be left with no value).

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In addition, the applicant argues that Chavis does not disclose using base parameters in the demand model to scale the amount of sales and the price. However, in the rejection, it is disclosed that Ouimet et al discloses using base parameters in Col. 10, lines 60-65. Here, the base parameters in the demand model are the amount of sales and price since the values depend on simply what are the typical sales level and price of the item.

As per claim 2, this claim is rejected for reasons similar to those discussed above with respect to claim 1 and 3. Claim 2 is therefore rejected for the same reasons as disclosed above with respect to claims 1 and 3.

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akiba K Robinson-Boyce whose telephone number is 571-272-6734. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Hayes can be reached on 571-272-6708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7238 [After final communications, labeled "Box AF"], 703-746-7239 [Official Communications], and 703-746-7150 [Informal/Draft Communications, labeled "PROPOSED" or "DRAFT"].

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

A. R. B.  
January 9, 2006

  
**JOHN W. HAYES**  
**SUPERVISORY PATENT EXAMINER**